

Abstract

A protein having been modified by addition, deletion, insertion or substitution of at least one amino acid in an amino acid sequence constituting a protein having a sarcosine oxidase activity and still having the sarcosine oxidase activity, characterized by having an improved stability in the state of a liquid compared with the unmodified one and/or having a lowered action on L-proline compared with the unmodified one. A sarcosine oxidase having at least one of the following characteristics, i.e., an action on L-proline being 0.7% or less based on sarcosine and a  $K_m$  value to L-proline being 150 mM or more, when measured at 37 °C and pH 8.0; a process for producing sarcosine oxidase having an excellent substrate specificity which comprises culturing a microorganism capable of producing sarcosine oxidase and collecting the sarcosine oxidase from the culture medium; and a reagent for measuring creatinine which contains the sarcosine oxidase.